

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
7 April 2005 (07.04.2005)

PCT

(10) International Publication Number  
**WO 2005/030989 A1**

(51) International Patent Classification<sup>7</sup>: **C12Q 1/68**,  
G01N 33/53, 33/554, C07K 1/10, C12P 21/00

(21) International Application Number:  
**PCT/CA2004/001757**

(22) International Filing Date:  
29 September 2004 (29.09.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/506,776 30 September 2003 (30.09.2003) US

(71) Applicant (for all designated States except US): **THE  
HOSPITAL FOR SICK CHILDREN [CA/CA]**; 555  
University Avenue, Toronto, Ontario M5G 1X8 (CA).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **DELLAIRE, Gra-  
ham [CA/CA]**; 49 Williamson Road, Toronto, Ontario  
M4E 1K6 (CA). **BAZETT-JONES, David, P. [CA/CA]**;  
3 Lockwood Road, Toronto, Ontario M4L 3M7 (CA).

(74) Agents: **BARTOSZEWICZ, Lola, A. et al.**; Sim &  
McBurney, 330 University Avenue, 6th Floor, Toronto,  
Ontario M5G 1R7 (CA).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,  
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,  
GW, ML, MR, NE, SN, TD, TG).

**Published:**

- with international search report
- before the expiration of the time limit for amending the  
claims and to be republished in the event of receipt of  
amendments

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

WO 2005/030989 A1

(54) Title: **METHOD OF *IN SITU* DETECTION OF PROTEINS USING APTAMERS**

(57) Abstract: The present invention is a method for the detection and localization of proteins *in situ*. The method comprises contacting a peptide tag labelled protein with a nucleic acid aptamer that recognizes the peptide tag. The nucleic acid aptamer is functionalized such that is detectable by a variety of methods. The method allows for the detection of one or more proteins and/or protein complexes in sub-cellular and sub-nuclear structures with high specificity and also allows for the purification of such identified proteins.